

Generate for DB2

Various types of external objects can be generated for DB2. This section contains:

- Common Parameters for all DB2 Types
- DB2 Database
- DB2 Procedure/Function
- DB2 Table/View
- DB2 Storagegroup
- DB2 Tablespace

For the above object types several common parameters can be set that are described under Common Parameters for all DB2 Types.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

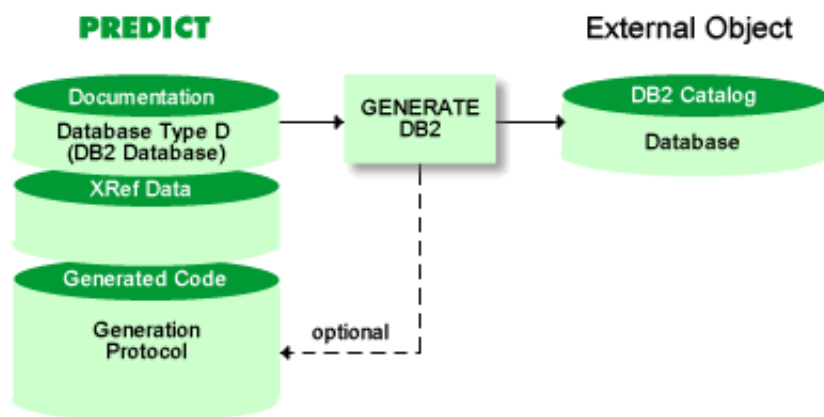
Common Parameters for all DB2 Types

The following parameters can be set in all DB2 object types.

Parameters	
Use SQLID	To switch from the logon user ID to a group ID in DB2, you can enter a different SQL ID in this field. The statement SET CURRENT SQLID will then be submitted.
List DB2 statements	Y List the generated DB2 SQL statements.
Protocol saved in member	SQL statements generated for the implementation of the database can be saved in a Natural source member (protocol) on the FDIC file. A member name for the protocol is only required when the DB2 database is generated for the first time. SQL statements generated in subsequent generation runs are concatenated to the protocol. The protocol can be displayed using the Display function of the Administration Implemented Database menu.
Protocol saved in library	Library where the protocol is to be saved.

DB2 Database

A DB2 database can be implemented with Predict by generating the necessary SQL statements. An additional confirmation is requested before the DB2 database is actually implemented. The generated SQL statements can be saved in a generation protocol.

**Note:**

This function is only available if DB2 is installed in your environment. The function is not applicable to SQL/DS.

Calling the Function

The Generate DB2 Database screen is displayed with function code G and object code D2 in a Predict main menu, or with the command GENERATE DB2-DATABASE.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

```

13:13:38          ***** P R E D I C T  4.3.1  *****          2003-05-31
Plan    0          - Generate DB2 Database -

Database ID .....*

Add database ..... Y  (Y,N)
Update database ..... N  (Y,N)

Use SQLID ..... HNO
List DB2 statements ..... Y  (Y,N)

Protocol saved in member ... *
                      in library .. DB2LIB

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help Next Stop Last LnkEl Flip Print Impl AdmFi SelFi Prof Main
  
```

Values for input fields which have been locked by your data dictionary administrator cannot be overwritten. These fields are skipped when positioning the cursor with the TAB key. See Generation Defaults.

Presetting	
The parameter below can be changed in the Modify DB2 Database Defaults screen. See Generation Defaults.	
Count of saved actions	Number (0-99) of generation actions which are stored in the protocol specified under Protocol saved in member/library. If 99 is entered, all generation actions are stored. This is the default setting at installation.
Parameters	
Database ID	ID of the Predict database object from which the DB2 database is to be generated. Enter an asterisk to display a selection screen. Alternatively, use an asterisk as a wildcard. For example, enter A* to display IDs beginning with A only.
Add database	Y A new DB2 database is created. If the DB2 database already exists, this parameter must be set to N.
Update database	Y If the database is already implemented, the differences of the implemented database and the Database object in Predict are determined and update commands are generated to modify the implemented database according to the Predict object.

Generate DB2 Database in Batch Mode

Command: GENERATE DB2-DATABASE

Enter parameters on next line in positional or keyword form. Database ID is obligatory, all other parameters are optional. If a parameter is not specified, the default value is taken.

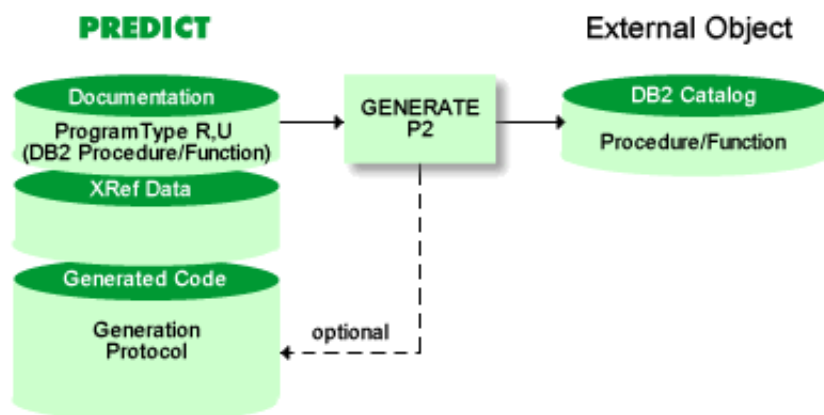
Field	Keyword	Position
Database ID	DB	1
List DB2 statements	LIST	2
Protocol saved in member	MEM	3
Protocol saved in library	LIB	4
Add database	ADD-DB	5
Update database	UPD-DB	6
Use SQLID	SQLID	7

Sample Output

13:51:40	***** P R E D I C T 4.3.1 *****	2003-05-31
	- Generate DB2 Database -	Page: 1
Database-ID: EXAM-DATABASE		
CREATE DATABASE EXAMDB		
STOGROUP EXAM001		
BUFFERPOOL BP1;		

DB2 Procedure/Function

A DB2 procedure or function requires an object of type Program as input, from which then either a procedure or a function is generated.



Note:

This function is only available if DB2 is installed in your environment. The function is not applicable to SQL/DS.

Calling the Function

The Generate DB2 Proc/Function screen is displayed with function code G and object code P2 in a Predict main menu, or with the command `GENERATE DB2-PROCEDURE`.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

```

13:13:38          ***** P R E D I C T 4.3.1 *****          2003-05-31
Plan    0          - Generate DB2 Proc/Function -

Program ID .....*

Add procedure/function ..... (Y,N)      Replace procedure/function .. (Y,N)
Update procedure/function .. (Y,N)      Comment on ..... (Y,N)

Use SQLID ..... HNO
List DB2 statements ..... Y (Y,N)

Protocol saved in member ... *
                in library .. DB2LIB

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Stop  Last  LnkEl Flip  Print Impl  AdmFi SelFi Prof  Main

```

Values for input fields which have been locked by your data dictionary administrator cannot be overwritten. These fields are skipped when positioning the cursor with the TAB key. See Generation Defaults.

Presetting	
The parameter below can be changed in the Modify DB2 Proc/Function Defaults screen. See Generation Defaults.	
Count of saved actions	Number (0-99) of generation actions which are stored in the protocol specified under Protocol saved in member/library. If 99 is entered, all generation actions are stored. This is the default setting at installation.
Parameters	
Program ID	<p>ID of the Predict program object from which the DB2 procedure/function is to be generated.</p> <p>The procedure name or function name is unique in Predict. However, in DB2, there can be several objects with the same name in different schemata. Therefore the object type Program has been extended by the attribute Schema. If no schema is given for a program, the correlation of the documentation and an implementation can be driven by the user, that is:</p> <ul style="list-style-type: none"> • If there is no object with the specified name in DB2, a CREATE statement is generated. • If an object already exists in DB2, you are asked whether the specified object is the correct one, or if you want to create a new object. If the you want to create a new object, a CREATE statement is generated, otherwise an ALTER statement is generated. <p>Enter an asterisk to display a selection screen. Alternatively, use an asterisk as a wildcard. For example, enter A* to display IDs beginning with A only.</p> <p>Note: The option Use SQLID can be set to choose a specific SQLID before the generation. It influences the allocation of the schema to which an object belongs.</p> <p>If no schema was given for an object of type Program, the documentation is supplemented by the SQLID after successful generation.</p>
Add procedure/function	<p>Y A new DB2 procedure/function is created. If the DB2 procedure/function already exists, this parameter must be set to N.</p>
Replace procedure/function	<p>Y An existing procedure/function in DB2 is dropped and created newly.</p>
Update procedure/function	<p>Y If the procedure/function is already implemented, the differences of the implemented procedure/function and the program object in Predict are determined and update commands are generated to modify the implemented procedure/function according to the Predict object.</p>
Comment on	<p>Y The first eight abstract lines of Predict field and file objects are used as DB2 comments for the columns and the table (SQL statement COMMENT ON).</p>

Note:

Links concerning the associations IN (Input FI) and RE (Returns FI) define the input and output parameters of the procedure or function.

Generate DB2 Procedures/Functions in Batch Mode

Command: GENERATE DB2-PROCEDURE

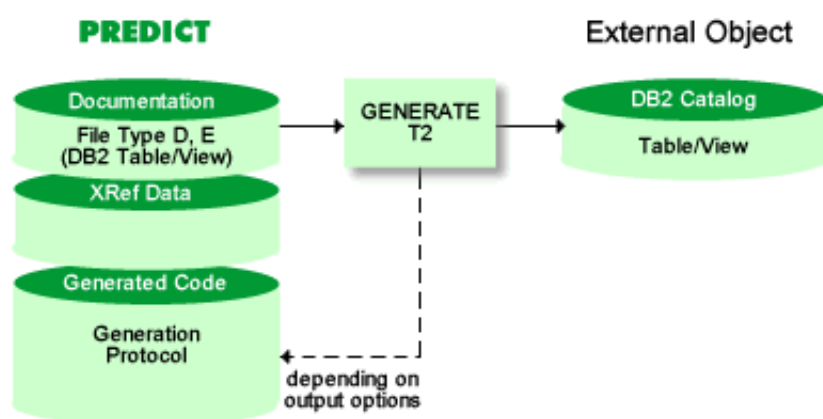
Enter parameters on next line in positional or keyword form. Program ID is obligatory, all other parameters are optional. If a parameter is not specified, the default value is taken.

Field	Keyword	Position
Program ID	PROGRAM-ID	1
Add procedure/function	ADD-PROCEDURE	2
Update procedure/function	UPD-PROCEDURE	3
Replace procedure/function	REPLACE	4
Comment on	COMMENT	5
List DB2 statements	LIST	6
Protocol saved in member	MEM	7
Protocol saved in library	LIB	8
Use SQLID	SQLID	9

DB2 Table/View

The Generate DB2 Table / View function:

- Generates DB2 and SQL/DS Table/View/Indexes. If a table contains a LOB column, the function generates a SET CURRENT RULE='STD' statement which allows DB2 to create the necessary auxiliary tablespaces, tables and indexes for these objects.
- Generates distinct types.
- Generates check expressions. A check expression that differs from the documentation in Predict is dropped and recreated.
- Generates triggers. A trigger that differs from the documentation in Predict is dropped and recreated.
- Modifies existing DB2 and SQL/DS Table/Indexes, replaces DB2 and SQL/DS Views/Indexes or
- Purges indexes from DB2 or SQL/DS tables if no longer documented with a corresponding Predict file object of file type D (DB2 Table).



Calling the Function

The Generate DB2 Table/View screen is displayed with function code G and object code T2 in a Predict main menu, or with the command GENERATE TABLE.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

```

13:32:37          ***** P R E D I C T 4.3.1 *****          2003-05-31
Plan    0          - Generate DB2 Table / View -

File ID .....*

Add table / view ..... Y (Y,N)      Replace view ..... N (Y,N)
Add index ..... Y (Y,N)            Defer option for indexes .* Y
Update table ..... N (Y,N)         Label on ..... Y (Y,N)
Update index ..... N (Y,N)         Comment on ..... Y (Y,N)
Purge index ..... N (Y,N)

Use SQLID ..... HNO
List DB2 statements ..... Y (Y,N)

Protocol saved in member ... *
                in library .. DB2LIB

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Stop  Last  LnkEl Flip  Print Impl  AdmFi SelFi Prof  Main

```

Values for input fields which have been locked by your data dictionary administrator cannot be overwritten. These fields are skipped when positioning the cursor with the TAB key. See Generation Defaults.

Presetting	
The parameter below can be changed in the Modify DB2 Table/View Defaults screen. See Generation Defaults.	
Count of saved actions	Number (0-99) of generation actions which are stored in the protocol specified under Protocol saved in member/library. If 99 is entered, all generation actions are stored. This is the default setting at installation.
Parameters	
File ID	ID of the Predict file object from which the DB2 table/view is to be generated. Enter an asterisk to display a selection screen. Alternatively, use an asterisk as a wildcard. For example, enter A* to display IDs beginning with A only.
Add table/view	Y A new DB2 table/view is created. If the DB2 table already exists, this parameter must be N.
Replace view	Y If the DB2 view already exists, the DB2 statements DROP VIEW and COMMIT are generated first, followed by the CREATE VIEW statement.
Add index	If DB2 indexes are defined for the DB2 table in Predict, set this option to Y to generate the CREATE INDEX statements.

Update table	<p>Y If the DB2 table/view is already implemented, commands are generated to adapt the DB2 table/view to the documentation (if differences were found).</p>
Update index	<p>Y If the DB2 index is already implemented, update commands are generated to adapt the DB2 index to the documentation (if differences were found). Updating DB2 indexes is only possible for differences of the following attributes: buffer pool, close, freepage, pctfree, VSAM catalog, storage group, primary allocation, secondary allocation, erase, index type, GBPCACHE, piece size. If any other attributes differ, Update index and Purge index must be set to Y. Predict will then "update" the index by issuing the statements DROP INDEX, COMMIT and CREATE INDEX.</p>
Purge index	<p>Y A DROP INDEX and a COMMIT statement are generated if a DB2 index exists and no corresponding index is defined in Predict.</p> <p>Note: Partitioned indexes cannot be purged.</p>
Label on	<p>Y The string specified in the Predict field attribute Header1 is used as DB2 label for the columns (SQL statement LABEL ON).</p> <p>Note: If Label on is set to Y, existing labels are generally overwritten even if Header1 is not specified in Predict for each column in the table.</p>
Comment on	<p>Y The first eight abstract lines of Predict field and file objects are used as DB2 comments for the columns and the table (SQL statement COMMENT ON).</p> <p>Note: If Comment on is set to Y, existing comments are generally overwritten even if no abstract is specified in Predict.</p>
Defer option for indexes	<p>Y The SQL statement CREATE INDEX is generated with the option DEFER YES.</p> <p>N The SQL statement CREATE INDEX is generated without the option DEFER YES.</p> <p>S A list containing all indexes is displayed. Enter Y for indexes which you would like to generate with the option. If you enter N or leave the field blank, the CREATE INDEX statement is generated without this option.</p>

Generate DB2 Table/View in Batch Mode

Command: GENERATE TABLE

Enter parameters on next line in positional or keyword form. File ID is obligatory, all other parameters are optional. If a parameter is not specified, the default value is taken.

Field	Keyword	Position
File ID	FILE-ID	1
Add table/view	ADD-TABLE	2
Add index	ADD-INDEX	3
Update table	UPD-TABLE	4
Update index	UPD-INDEX	5
Purge index	PURGE-INDEX	6
Replace view	REPLACE	7
Note: For compatibility reasons only	PSW	8
List DB2 statements	LIST	9
Protocol saved in member	MEM	10
Protocol saved in library	LIB	11
Label on	LABEL	12
Comment on	COMMENT	13
Defer option for indexes	DEFER	14
Use SQLID	SQLID	15

Sample File Definition

The following file definition was used for generating the sample output:

13:21:21

***** P R E D I C T 4.3.1 *****

2003-05-31

- Display File with Children -

Page: 1

File ID EXAM-GEN_TABLE

DB2 attributes

Number of partitions ..

Edit program PROGDB

Validation program

Audit N Audit none

OBid 0

Data capture

Max. length 4056

Abstract

this are comments for table

exam-gen_table

Cnt	Ty	L	Field ID	F	Cs	Length	D	DB	N	Df
1	1		EMPNO	A		6.0	P	AA	R	N
			Field is defined as unique							
			Source field(s)							
			EMPNO							
										Order
										ascending
2	1		FIRSTNME	AV		12.0	N	AB	R	N
3	1		MIDINIT	A		1.0	N	AC	R	N
4	1		LASTNAME	AV		15.0	N	AD	R	N
5	1		WORKDEPT	A		3.0	F	AE	R	Y
			Source field(s)							
			WORKDEPT							
										Order
										ascending
6	1		PHONENO	A		4.0	N	AF	R	Y
7	1		HIREDATE	D			N	AG	R	Y
8	1		JOB	A		8.0	N	AH	R	Y
9	1		EDLEVEL	I		2.0	N	AI	R	Y
10	1		SEX	A		1.0	N	AJ	R	Y
11	1		BIRTHDATE	D			N	AK	R	Y
12	1		SALARY	PS		7.2	N	AL	R	Y
13	1		BONUS	PS		7.2	N	AM	R	Y
14	1		COMM	PS		7.2	N	AN	R	Y

*** End of report ***

Sample Output

```

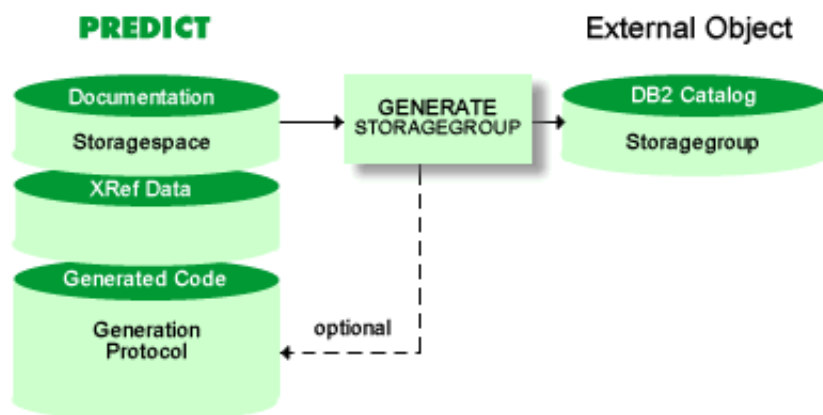
13:52:21          ***** P R E D I C T 4.3.1 *****          2003-05-31
                        - Generate DB2 Table / View -          Page:    1
File-ID: EXAM-GEN_TABLE
CREATE TABLE EXAM.GEN_TABLE
  (EMPNO              CHAR(6)              NOT NULL,
   FIRSTNME           VARCHAR(12)          NOT NULL,
   MIDINIT            CHAR(1)              NOT NULL,
   LASTNAME            VARCHAR(15)         NOT NULL,
   WORKDEPT           CHAR(3)              NOT NULL WITH DEFAULT,
   PHONENO             CHAR(4)              NOT NULL WITH DEFAULT,
   HIREDATE            DATE                 NOT NULL WITH DEFAULT,
   JOB                 CHAR(8)              NOT NULL WITH DEFAULT,
   EDLEVEL             SMALLINT             NOT NULL WITH DEFAULT,
   SEX                 CHAR(1)              NOT NULL WITH DEFAULT,
   BIRTHDATE           DATE                 NOT NULL WITH DEFAULT,
   SALARY              DECIMAL(9, 2)        NOT NULL WITH DEFAULT,
   BONUS               DECIMAL(9, 2)        NOT NULL WITH DEFAULT,
   COMM               DECIMAL(9, 2)        NOT NULL WITH DEFAULT,
   PRIMARY KEY (EMPNO))
IN DATABASE EXAMDB
EDITPROC PROGDB
AUDIT NONE;
CREATE UNIQUE INDEX PRDDBA.EMPNO
  ON EXAM.GEN_TABLE
  (EMPNO                                ASC)
  SUBPAGES 4
  BUFFERPOOL BP0
  CLOSE YES;
CREATE INDEX DSN8210.XEMP2
  ON EXAM.GEN_TABLE
  (WORKDEPT                             ASC)
  SUBPAGES 4
  BUFFERPOOL BP0
  CLOSE YES;

DIC1880 SUMMARY:      14 FIELD(S) PROCESSED

```

DB2 Storagegroup

A DB2 storagegroup can be implemented with Predict by generating the necessary SQL statements. An additional confirmation is requested before the DB2 storagegroup is actually implemented. The generated SQL statements can be saved in a generation protocol.



Calling the Function

The Generate DB2 Storagegroup screen is displayed with function code G and object code SG in a Predict main menu, or with the command GENERATE STORAGEGROUP.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

```

13:09:57          ***** P R E D I C T 4.3.1 *****          2003-05-31
Plan              - Generate DB2 Storagegroup -

Storagespace ID .....*

Add storagegroup ..... Y (Y,N)
Update storagegroup ..... N (Y,N)

Use SQLID ..... HNO
List DB2 statements ..... Y (Y,N)

Protocol saved in member ... *
                      in library .. DB2LIB

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help  Next  Stop  Last  LnkEl Flip  Print Impl  AdmFi SelFi Prof  Main
  
```

Values for input fields which have been locked by your data dictionary administrator cannot be overwritten. These fields are skipped when positioning the cursor with the TAB key. See Generation Defaults.

Presetting	
The parameter below can be changed in the Modify DB2 Storagegroup Defaults screen. See Generation Defaults.	
Count of saved actions	Number (0-99) of generation actions which are stored in the protocol specified under Protocol saved in member/library. If 99 is entered, all generation actions are stored. This is the default setting at installation.
Parameters	
Storagespace ID	ID of the Predict storagespace object from which the DB2 storagegroup is to be generated. Enter an asterisk to display a selection screen. Alternatively, use an asterisk as a wildcard. For example, enter A* to display IDs beginning with A only.
Add storagegroup	Y A new DB2 storagegroup is created. If the DB2 storagegroup already exists, this parameter must be set to N.
Update storagegroup	Y If the DB2 storagegroup is already implemented, commands are generated to adapt the DB2 storagegroup to the documentation (if differences were found).

Generate DB2 Storagegroup in Batch Mode

Command: GENERATE STORAGEGROUP

Enter parameters on next line in positional or keyword form. Storagespace ID is obligatory, all other parameters are optional. If a parameter is not specified, the default value is taken.

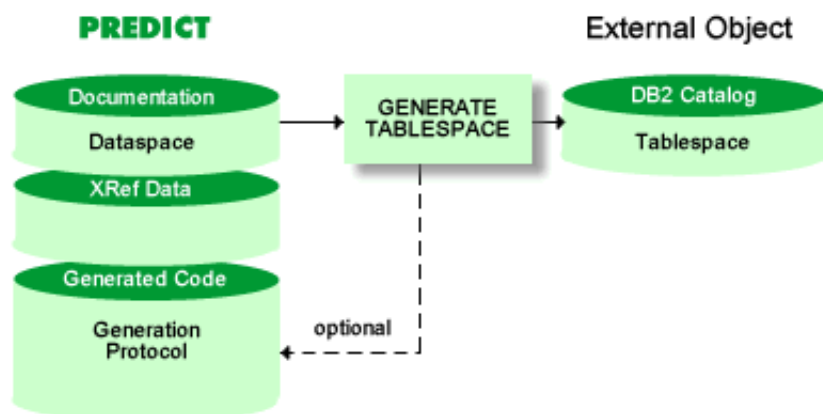
Field	Keyword	Position
Storagespace ID	STORAGESPACE-ID	1
Add Storagegroup	ADD-STORAGEGROUP	2
Update Storagegroup	UPD-STORAGEGROUP	3
List DB2 statements	LIST	4
Protocol saved in member	MEM	5
Protocol saved in library	LIB	6
Note: For compatibility reasons only.	PASSWORD	7
Use SQLID	SQLID	8

Sample Output

13:53:28	***** P R E D I C T 4.3.1 *****	2003-05-31
	- Generate DB2 Storagegroup -	Page: 1
Storagespace-ID: EXAM-STORAGEGROUP		
CREATE STOGROUP EXAM001		
VOLUMES (VOL05)		
VCAT DB2;		

DB2 Tablespace

A DB2 tablespace can be implemented with Predict by generating the necessary SQL statements. Additional confirmation is requested before the DB2 tablespace is actually implemented. The generated SQL statements can be saved in a generation protocol.



Calling the Function

Display the Generate DB2 Tablespace screen with code G and object code TS in a Predict main menu, or with the command GENERATE TABLESPACE.

Prerequisites

Generation of DB2 objects is subject to DB2 security mechanisms. See the section DB2 and SQL/DS in the **Predict and Other Systems documentation** for more information.

```

13:19:18          ***** P R E D I C T  4.3.1  *****          2003-05-31
Plan              - Generate DB2 Tablespace -

Dataspace ID .....*

Add tablespace ..... Y  (Y,N)
Update tablespace ..... N  (Y,N)

Define ..... Y  (Y,N)

Use SQLID ..... HNO
List DB2 statements ..... Y  (Y,N)

Protocol saved in member ..... *
                      in library .... DB2LIB

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help Next Stop Last LnkEl Flip Print Impl AdmFi SelFi Prof Main
  
```

Values for input fields which have been locked by your data dictionary administrator cannot be overwritten. These fields are skipped when positioning the cursor with the TAB key. See Generation Defaults.

Presetting	
The parameter below can be changed in the Modify DB2 Tablespace Defaults screen. See Generation Defaults.	
Count of saved actions	Number (0-99) of generation actions which are stored in the protocol specified under Protocol saved in member/library. If 99 is entered, all generation actions are stored. This is the default setting at installation.
Parameters	
Dataspace ID	ID of the Predict dataspace object from which the DB2 tablespace is to be generated. Enter an asterisk to display a selection screen. Alternatively, use an asterisk as a wildcard. For example, enter A* to display IDs beginning with A only.
Add tablespace	Y A new DB2 tablespace is created. If the DB2 tablespace already exists, this parameter must be set to N.
Update tablespace	Y If the tablespace is already implemented, the differences of the implemented tablespace and the documented dataspace are determined and update commands are generated to modify the implemented tablespace according to the documented dataspace. Note: Certain parameters may be modified with the ALTER TABLESPACE statement only when the database is active, other parameters only when the database is stopped. For this reason it may be necessary to submit the generation job twice.
Define	N A DEFINE NO clause is generated

Generate DB2 Tablespace in Batch Mode

Command: GENERATE TABLESPACE.

Enter parameters on next line in positional or keyword form. Dataspace ID is obligatory, all other parameters are optional. If a parameter is not specified, the default value is taken.

Field	Keyword	Position
Dataspace ID	DATASPACE-ID	1
Add tablespace	ADD-TABLESPACE	2
Update tablespace	UPD-TABLESPACE	3
List DB2 statements	LIST	4
Protocol saved in member	MEM	5
Protocol saved in library	LIB	6
Note: For compatibilty reasons only.	PASSWORD	7
Define	DEFINE	8
Use SQLID	SQLID	9

Sample Output

```
13:54:53          ***** P R E D I C T 4.3.1 *****          2003-05-31
                        - Generate DB2 Tablespace -          Page: 1
Dataspace-ID: EXAM-TABLESPACE

CREATE TABLESPACE EXAMTS IN EXAMDB
      NUMPARTS 4
      BUFFERPOOL BP0
      LOCKSIZE ANY
      CLOSE NO;
```